

 HYUNDAI Technical Service Bulletin	GROUP AUTOMATIC TRANSMISSION	NUMBER 20-AT-014H
	DATE APRIL 2020	MODEL Accent (RB), Azera (TG/HG), Elantra (UD/MD/GD/JK), Santa Fe (CM/AN/NC), Sonata (YF/YF HEV, LF/LF HEV/PHEV), Tucson (LM/TL), Veloster Turbo (FS)
SUBJECT: AUTOMATIC TRANSAXLE OIL TEMPERATURE SENSOR P0711, P0712 & P0713		

This TSB supersedes TSB 15-AT-011 to revise the Applicable Vehicles.

Description: If you are servicing an applicable vehicle with a “Check Engine” light on and one or more of the DTC listed below, follow the repair procedure and replace the related solenoid and oil pressure harness.

NOTE: The 6-speed vehicles listed below are equipped with a Generation1 valve body with 8 solenoids. Newer 6-speed transmissions have a Generation2 valve body with 7 solenoids (Refer to TSB 20-AT-015H).

Applicable Vehicles:

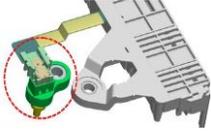
2012~17	Accent (RB)
2011	Azera (TG)
2012~17	Azera (HG)
2011~16	Elantra (MD/UD)
2013~17	Elantra GT (GD)
2013~14	Elantra Coupe (JK)
2010~12	Santa Fe (CM)
2013~18	Santa Fe Sport (AN) 2.0L
2013~16	Santa Fe Sport (AN) 2.4L
2013~19	Santa Fe (NC)
2011~14	Sonata (YF)
2015~19	Sonata (LF) (2.0L/2.4L)
2011~15	Sonata Hybrid (YF HEV)
2016~19	Sonata Hybrid (LF HEV)
2016~19	Sonata Plug-in Hybrid (LF PHEV)
2010~15	Tucson (LM) 2.4L
2011~15	Tucson (LM) 2.0L
2016~	Tucson (TL) 2.0L
2013~15	Veloster (FS) 1.6T

DTC LIST:

DTC LIST	DESCRIPTION
P0711	Transmission Fluid Temperature Sensor - Rationality check
P0712	Transmission Fluid Temperature Sensor - Circuit Low Input
P0713	Transmission Fluid Temperature Sensor - Circuit High Input

SUBJECT: ATM OIL TEMPERATURE SENSOR DTC P0711, P0712 & P0713

PARTS INFORMATION:

Oil temperature sensor and internal harness	Previous (separate parts)	New (integrated parts)
		

NOTE: The oil temperature sensor was integrated with the internal harness from March 2013.

	MODEL	ENGINE	OIL TEMPERATURE SENSOR	HARNESS	PLASTIC OIL PAN GASKET
2012~17	Accent (RB)	1.6L	46386-3B***	46307-3B***	45282-26***
2012~17	Azera (HG)	3.3L	46386-3B***	46307-3B***	45283-3B***
2011~16	Elantra (MD/UD)	1.8L	46386-3B***	46307-3B***	45282-26***
2014~16	Elantra (MD/UD)	2.0L	46386-3B***	46307-3B***	45282-26***
2013	Elantra Coupe (JK)	1.8L	46386-3B***	46307-3B***	45282-26***
2014	Elantra Coupe (JK)	2.0L	N/A	46307-3B***	45282-26***
2013~17	Elantra GT (GD)	1.8L	46386-3B***	46307-3B***	45282-26***
2010~12	Santa Fe (CM)	2.4L	46386-3B***	46307-3B***	45283-****
2010~12	Santa Fe (CM)	3.5L	46386-3B***	46307-3B***	45283-****
2013~18	Santa Fe Sport (AN)	2.0L	46386-3B***	46307-3B***	45283-3B***
2013~16	Santa Fe Sport (AN)	2.4L	46386-3B***	46307-3B***	45283-3B***
2013~19	Santa Fe (NC)	3.3L	46386-3B***	46307-3B***	45283-3B***
2011~14	Sonata Turbo (YF)	2.0L	46386-3B***	46307-3B***	45283-3B***
2011~14	Sonata (YF)	2.4L	46386-3B***	46307-3B***	45283-3B***
2015~19	Sonata (LF)	2.0L	N/A	46307-3B***	45283-3B***
2015~19	Sonata (LF)	2.4L	N/A	46307-3B***	45283-3B***
2011~15	Sonata (YF HEV)	2.4L	46386-3B***	46307-3B***	45283-3D***
2016~19	Sonata (LF HEV)	2.0L	N/A	46307-3B***	45283-3D***
2016~19	Sonata (LF PHEV)	2.0L	N/A	46307-3B***	45283-3D***
2010~15	Tucson (LM)	2.4L	46386-3B***	46307-3B***	45283-3B***
2011~15	Tucson (LM)	2.0L	46386-3B***	46307-3B***	45283-3B***
2016~	Tucson (TL)	2.0L	N/A	46307-3B***	45283-3B***
2013~15	Veloster Turbo (FS)	1.6L	46386-3B***	46307-3B***	45283-3B***

WARRANTY INFORMATION – REPLACE HARNESS WITH INTEGRATED OIL TEMPERATURE SENSOR:

Model	Op Code	Operation	OP Time	Causal Part	Nature Code	Cause Code
2012~17 Accent (RB) 2012~17 Azera (HG) 2011~16 Elantra (MD/UD) 2013~17 Elantra GT (GD) 2013~14 Elantra Coupe (JK) 2013~18 Santa Fe Sport (AN) 2.0L 2013~16 Santa Fe Sport (AN) 2.4L 2013~19 Santa Fe (NC) 2011~14 Sonata (YF) 2015~19 Sonata (LF) 2.0L/2.4L 2011~15 Sonata Hybrid (YF HEV) 2016~19 Sonata Hybrid (LF HEV) 2016~19 Sonata Plug-in (LF PHEV) 2011~15 Tucson (LM) 2.0L 2016~ Tucson (TL) 2.0L 2013~15 Veloster (FS) 1.6T	46308R00	Valve body harness equipped with oil temperature sensor	Refer to WEBLTS for LTS time	Refer to Parts Information Table on Page 2	N69	C15
2011~15 Sonata Hybrid (YF HEV) 2016~19 Sonata Hybrid (LF HEV)	46308RH1	Additional				
ALL	46308RQ0	GDS				

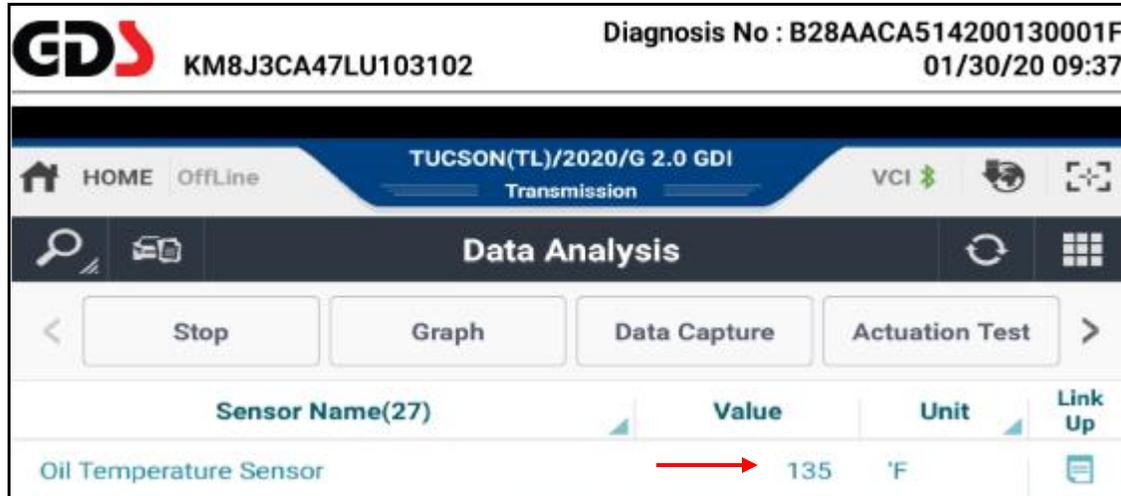
WARRANTY INFORMATION – REPLACE OIL TEMPERATURE SENSOR AND HARNESS (SEPARATE):

NOTE: The oil temperature sensor was integrated with the internal harness from March 2013.

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSE CODE
2012~13 Accent (RB) 2011 Azera (TG) 2012~13 Azera (HG) 2011~13 Elantra (MD/UD) 2013 Elantra GT (GD) 2013 Elantra Coupe (JK) 2010~12 Santa Fe (CM) 2013 Santa Fe (AN) 2.0L 2013 Santa Fe (AN) 2.4L 2013 Santa Fe (NC) 2011~13 Sonata (YF) 2011~13 Sonata (YF HEV) 2010~13 Tucson (LM) 2013 Veloster (FS) 1.6T	46307R00	Auto transmission valve body harness (includes time for oil temperature sensor)		See Parts List on Page 2	N69	C15
2011~13 Sonata (YF HEV)	46307RH1	Additional				
ALL	46307RQ0	GDS Operation				

SERVICE PROCEDURE:

1. Attach a GDS and select **DTC Analysis** and **A/T** menu. Record the DTC and description. Delete the DTC.
2. From the GDS, select **DTC Analysis**, **A/T** menu and **Oil Temperature Sensor**. Drive the vehicle and monitor the sensor.



3. If the sensors show:
 - Continuous and changing output while driving, the wiring **currently** has no open/short circuits. Go to Step 5.
 - No output or unchanging output, go to Step 4.
4. Visually check the wiring harness between the ECU and transmission for a damaged wire or short circuit to ground. Check for a damaged pin or pin not fully inserted into the connector.
 - If damage exists, repair or replace the ECU control harness and drive the vehicle to confirm the repair.
 - If no damage, go to Step 5.
5. Refer to the DTC recorded in Step 1 and follow the repair procedure shown below:

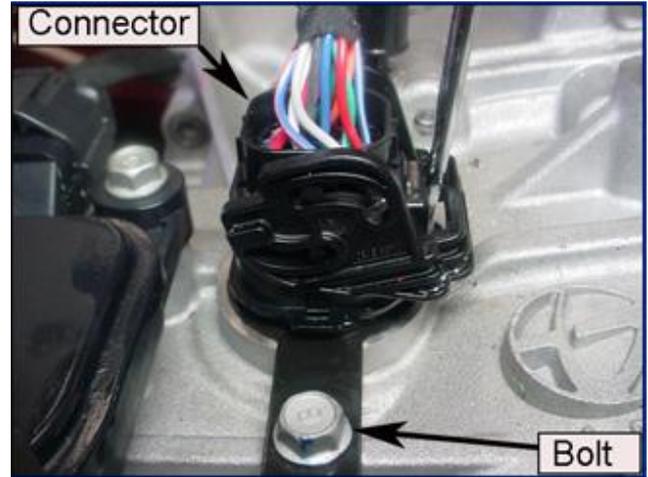
DTC		REPAIR PROCEDURE
P0711	Transmission Fluid Temperature Sensor - Rationality check	Go to Step 6 and replace the oil temperature sensor <u>and</u> valve body harness
P0712	Transmission Fluid Temperature Sensor - Circuit Low Input	
P0713	Transmission Fluid Temperature Sensor - Circuit High Input	

6. Record the preset radio stations.
Remove the battery and battery tray.
7. Remove the undercover below the transmission.
8. Drain the radiator and remove the lower radiator hose from the radiator.
Drain the ATF.

9. Use a screwdriver to release the tab and remove the solenoid connector on top of the case.

Remove the bolt that secures the connector and push the connector into the transmission.

Disconnect the vent hose at the top of the oil pan.



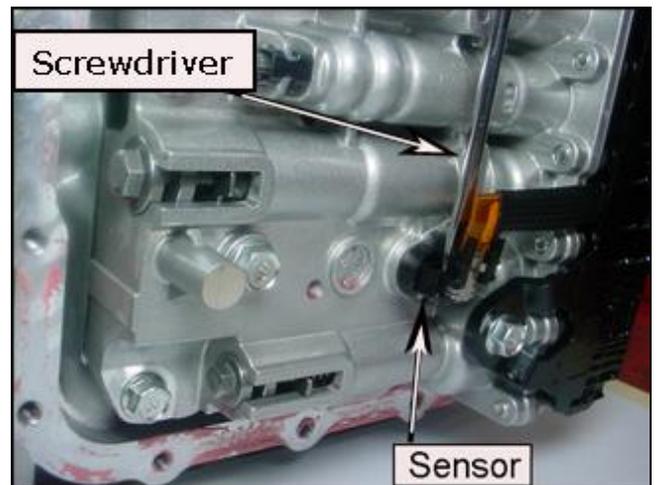
10. Remove the oil pan bolts and remove the pan.

CAUTION

Use a rubber hammer to tap the oil pan cover on a corner until the cover is loose.

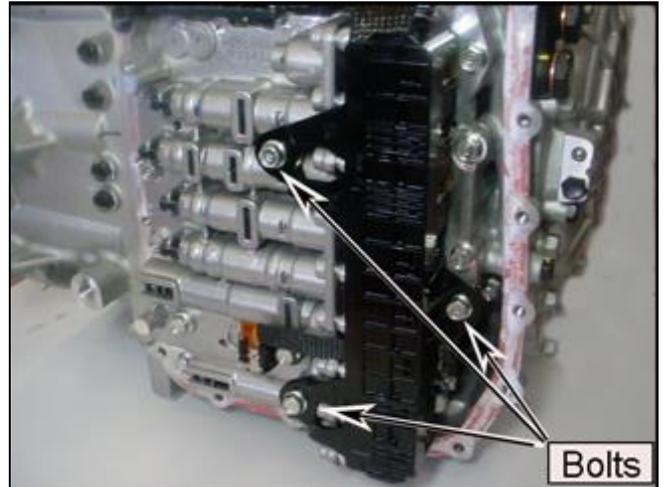


11. Use a small screwdriver to pry the connector from the oil temperature sensor (except for vehicles with integrated oil temperature sensor and harness).

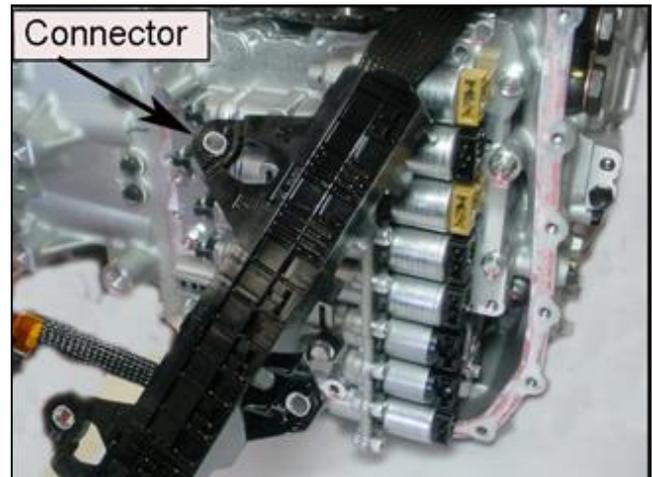


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12. Remove three bolts to the solenoid valve connector.

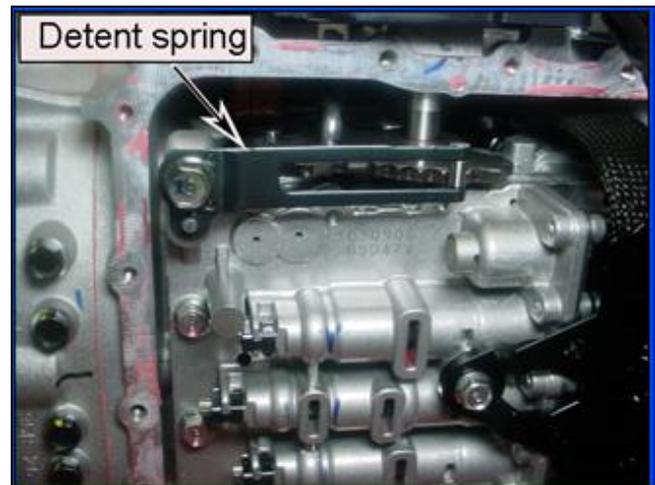


13. Pull the solenoid connector outward and move the connector out of position.

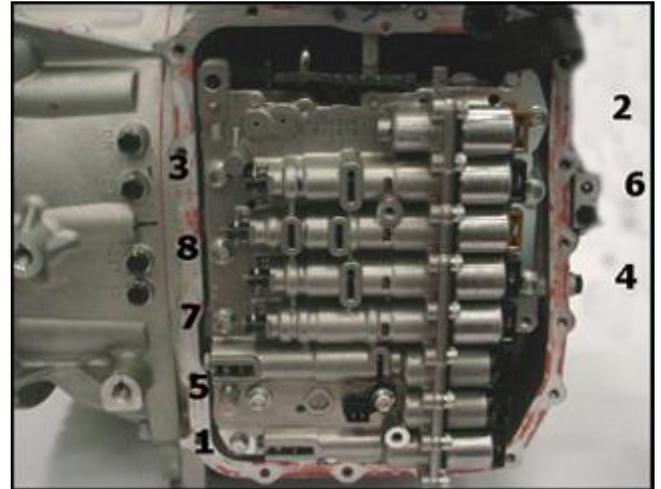


14. Remove the bolt that secures the detent spring and remove the spring.

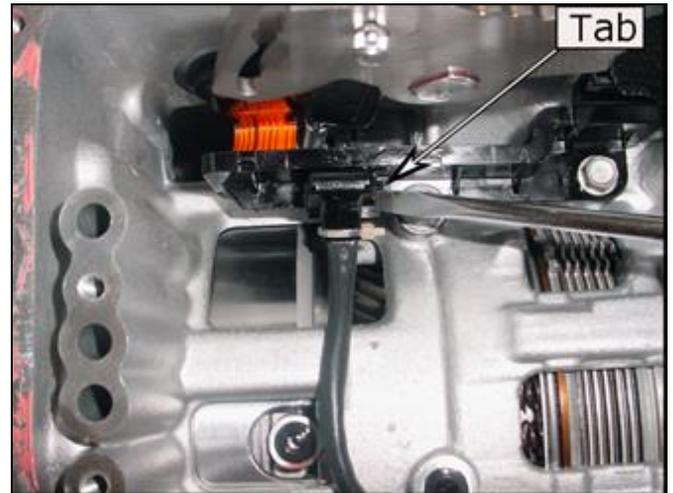
Torque: 8~11 lb.ft (1.2~1.6 kgf.m/11~15 N.m)



15. Remove 8 bolts in the order shown and remove the valve body.



16. Use a screwdriver to depress the locking tab and pull outward on the connector to the input/output speed sensor.



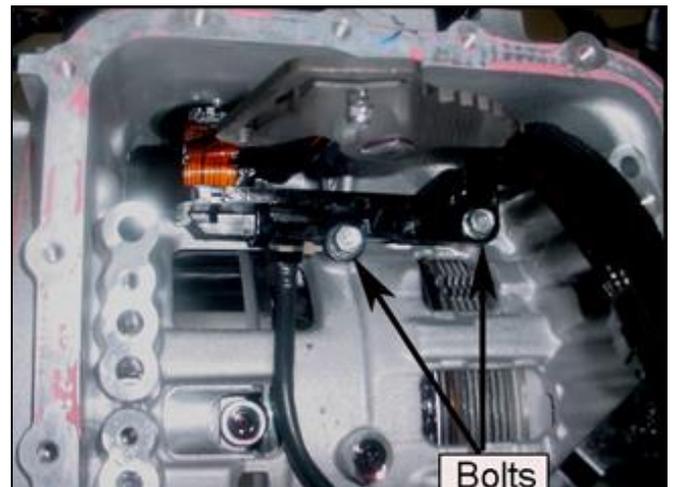
17. Remove two bolts that secure the valve body harness to the case.

Pull the connector downward out of the case.

Install a new harness and insert the connector into the case. Attach the retainer and bolt on top of the case as shown in Step 9.

Install the bolts that secure the harness.

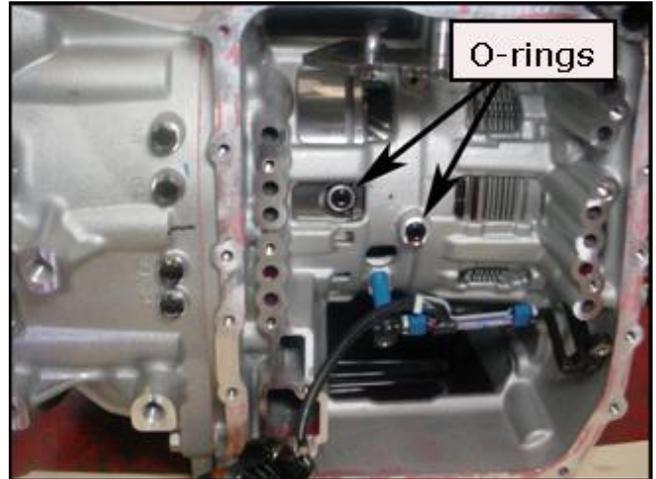
Torque: 6~7 lb.ft (0.9~1.0 kgf.m/8~9 N.m)



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18. Confirm two o-rings are installed correctly in the case.

Reconnect the input and output speed sensor connector to the harness.

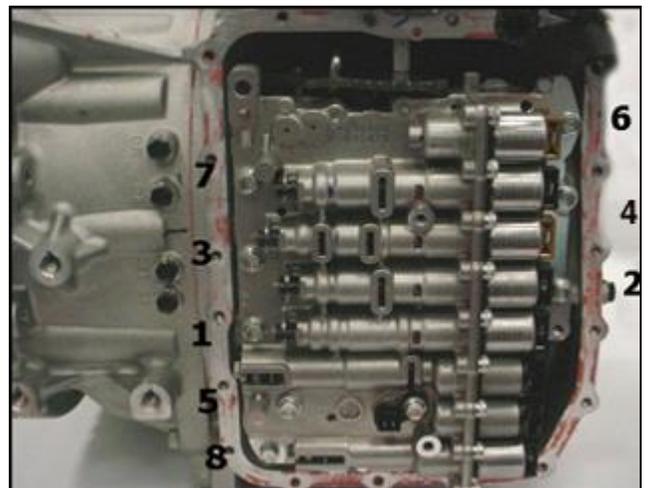


19. Align the manual shaft to the shift lever and install the valve body.



20. Install the valve body bolts and torque the bolts to specification in the order shown.

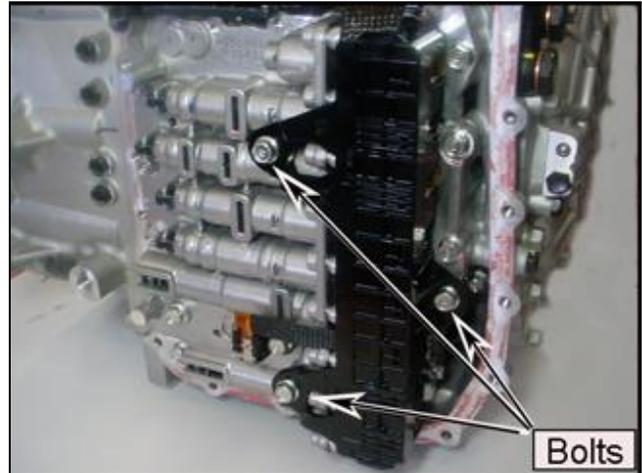
Torque: 7~9 lb.ft (1.0~1.2 kgf.m, 10~12 N.m)



21. Reconnect the solenoid harness to the solenoids and oil temperature sensor.

Install the bolts to the solenoid harness connector and torque to specification.

Torque: 7~9 lb.ft (1.0~1.2 kgf.m, 10~12 N.m)



22. **PLASTIC OIL PAN (If equipped):**
Install a new gasket to the oil pan, reinstall the pan and tighten the bolts to specification.

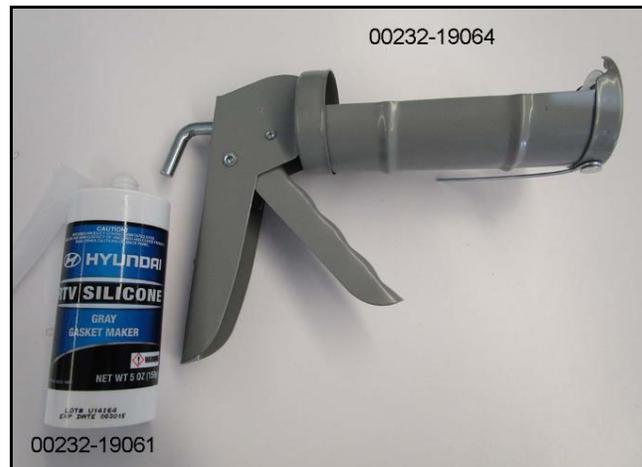
Torque: 6~7 lb.ft (0.9~1.0 kgf.m/8~9 N.m)



STEEL OIL PAN (If equipped):
Use RTV Silicon Gray, P/N 00232-19061 and a small caulking gun, P/N 00232-19064, or equivalent and apply sealant to the oil pan.

Reinstall the pan.

Torque: 9~11 lb.ft (1.3~1.5 kgf.m/12~15 N.m)



23. Add ethylene glycol engine coolant to the radiator and check the level according to the appropriate shop manual, "Engine" section.
24. Reconnect the battery.
Input the radio stations recorded in Step 6.

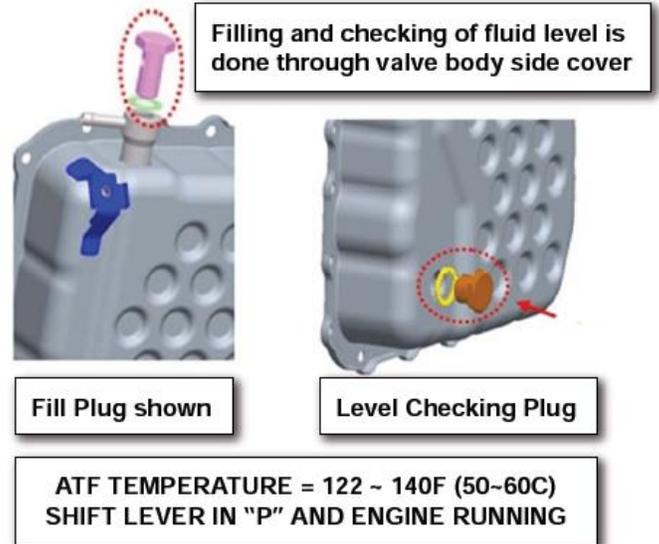
25. Remove the transaxle fill plug.

Use a funnel to add approximately 5~6 quarts of SP4-M ATF through the fill plug opening. Reinstall the fill plug.

Attach the GDS to the DLC and select vehicle, A/T menu, Current Data and **Oil Temperature Sensor**.

Start the engine and shift to Park. When the ATF is **122°F~140°F (50~60°C)**, remove the level checking plug. The level is correct when oil flows out of the level checking plug in a thin steady stream.

Collect and dispose of any excess fluid in accordance with local regulations.



26. Reinstall all removed parts in the reverse order of disassembly.

27. Attach a GDS and check for DTC. Erase all DTC.

28. Clear the DTC in the BlueLink system per instructions of 19-BE-010H if applicable

29. Drive the vehicle for two key-on/key-off driving cycles.

- If the DTC does not occur again, return the vehicle to the customer.
- If the DTC returns, perform the following repairs:

DTC		REPAIR PROCEDURE
P0711	Transmission Fluid Temperature Sensor - Rationality check	<ul style="list-style-type: none"> • Repair or replace the control harness between the ECU and the transmission. • Drive the vehicle for two drive cycles. If the DTC return again, replace the PCM.
P0712	Transmission Fluid Temperature Sensor - Circuit Low Input	
P0713	Transmission Fluid Temperature Sensor - Circuit High Input	